



STREAMS



WETLANDS



SHORELINES

EXHIBIT NO. CC 5



GEOLOGICAL
HAZARD AREAS

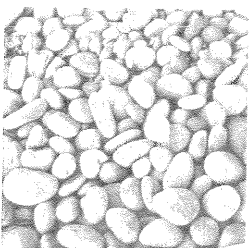
CRITICAL AREAS HANDBOOK

RESTORING, ENHANCING, AND PRESERVING



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INTRODUCTION



Under the guidelines of the City of Bellevue's **Critical Areas Ordinance**, the **Critical Areas Handbook** has been designed as a detailed, step-by-step guide to aid property owners in the development, installation, monitoring, and maintenance of small-scale environmental enhancement and restoration projects. The Handbook will guide you through the processes involved to design, implement, and maintain sites with **critical areas** consisting of or adjacent to **streams, wetlands, shorelines, geological hazard areas**, and the **buffers** around these features. By the end of this handbook, you will be able to design and install your simple restoration plan for your particular situation. The five sequential chapters provided will help you to:

1. **Define your critical area**
2. **Evaluate your site**
3. **Design a plan**
4. **Install your plans**
5. **Maintain and monitor your project**

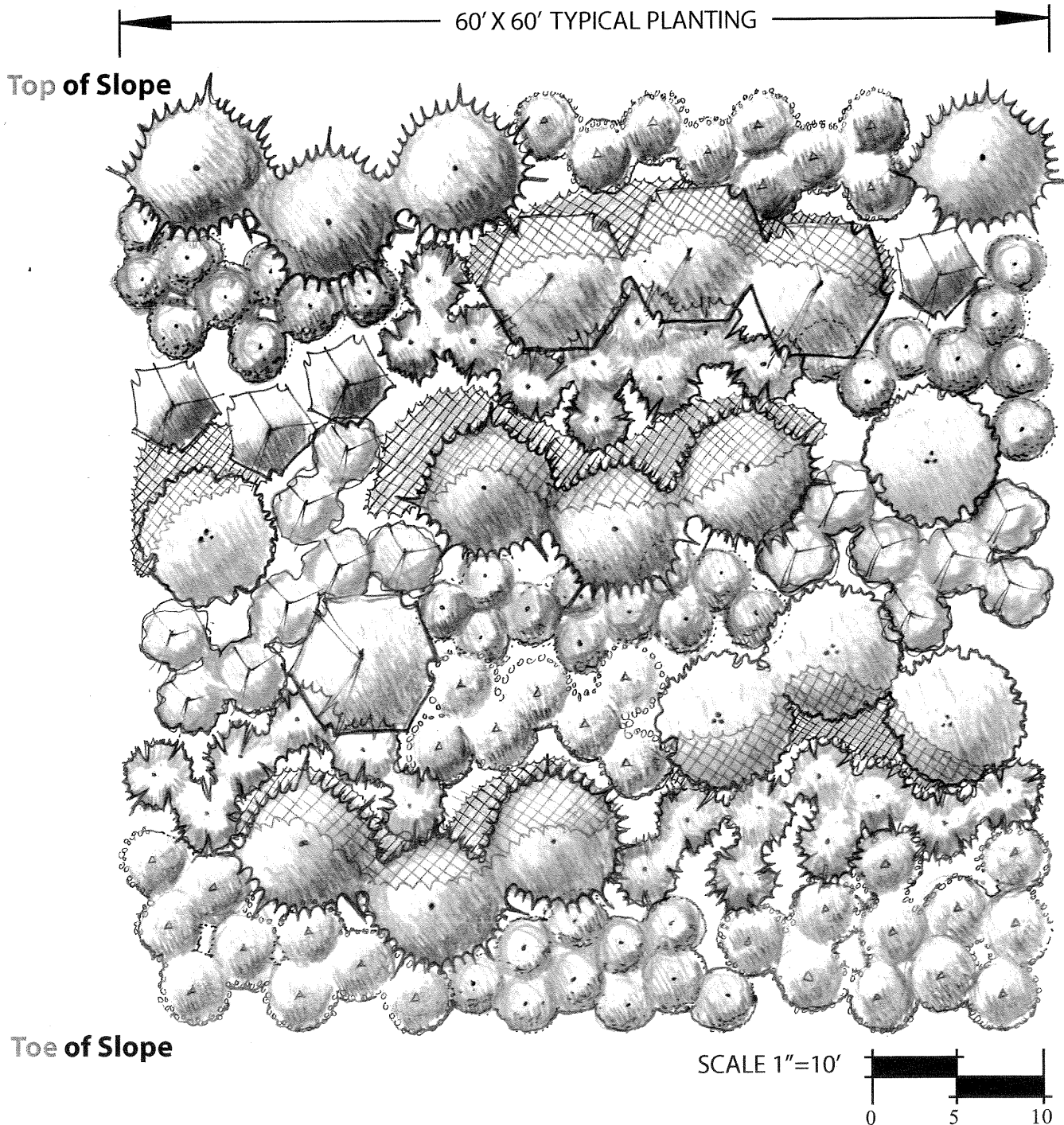
Throughout this Handbook, words in **bold** are defined in the *Glossary* (see *Appendix A*) at the end of the document.

WHO SHOULD USE THIS HANDBOOK?

- Those who want to voluntarily promote environmental **stewardship** through the removal of **invasive** weeds and/ or planting of native species;
- Those required to **remediate** a **critical areas** violation, by restoring or replacing the affected area to equal or better environmental function than what was lost, and;
- Those required to **mitigate** for critical areas impacts in anticipation of a loss of critical area square footage or environmental function as a result of a proposed development project.

Remember, property owners must obtain a permit or other official exemption prior to breaking ground on a project.

GEOLOGICAL HAZARDS (STEEP SLOPE) PLANTING TEMPLATE



Steep slopes commonly have fragile, erodible soils. Planting can be difficult to establish in these areas as gravity, wind, and rain have a tendency to pull nutrient-rich soil down the slope. In addition, sunny sites require drought-tolerant plants, while both sunny and shady sites require plants with strong, root systems to keep soil intact. On the next two pages you will find one legend designed for sunny, steep sites and one designed for shady, steep sites. The plants chosen for these templates are known for drought tolerance and soil-binding characteristics. With the successful establishment of plants on steep slopes, the potential for erosion decreases. For additional information on Steep Slopes, refer to the section on *Geological Hazard Areas* in *Chapter One* and the City's Critical Areas Ordinance. Note, these templates are to be used for stable and undisturbed sloping sites. If your site has experienced a landslide or substantial erosion, do not use this template; consult a professional.

PLANT LEGEND FOR SUNNY SITES

LATIN NAME/ COMMON NAME

TYPICAL SPACING/ AVERAGE HEIGHT

CHARACTERISTICS

TREES

Acer macrophyllum/
Big-leaf maple

9 feet on center/
75 feet

Yellow fall color, provides
understory shade, largest leaf
of all maples

Alnus rubra/
Red alder

9 feet on center/
60 feet

Vigorous grower, provides
cover quickly for other plants

Pseudotsuga menziesii/
Douglas-fir

9 feet on center/
100 feet

Highly adaptable, fast grower

SHRUBS

Corylus cornuta/
Beaked hazelnut

6 feet on center/
11 feet

Edible acorn, wildlife food.
Small understory tree,
yellowish fall color
Spectacular blossom; attracts
hummingbirds and butterflies

Holodiscus discolor/
Oceanspray

4.5 feet on center/
7 feet

Fragrant white blossom

Philadelphus lewisii/
Mock orange

4.5 feet on center/
8 feet

Delicious edible berries, fast
grower, likes sun

Rubus parviflorus/
Thimbleberry

4 feet on center/
8 feet

Symphoricarpos albus/
Snowberry

4.5 feet on center/
5 feet

White berries, proven
performer in tough conditions

GROUNDCOVERS & PERENNIALS

Arctostaphylos uva-ursi/
Kinnikinnick

*24 in. on center/
6-8 in.

Evergreen groundcover, great
for rockeries and full sun areas

Fragaria chiloensis/
Coastal strawberry

*24 in. on center/
4-6 in.

Tough, highly adaptable
groundcover w/ red stems
and edible berries

Festuca idahoensis/
Idaho fescue

*24 in. on center/
2.5 feet

Bluish leaves, clumping

Polystichum munitum/
Sword fern

*24 in. on center/
5 feet once mature

Semi-evergreen fern, highly
adaptable

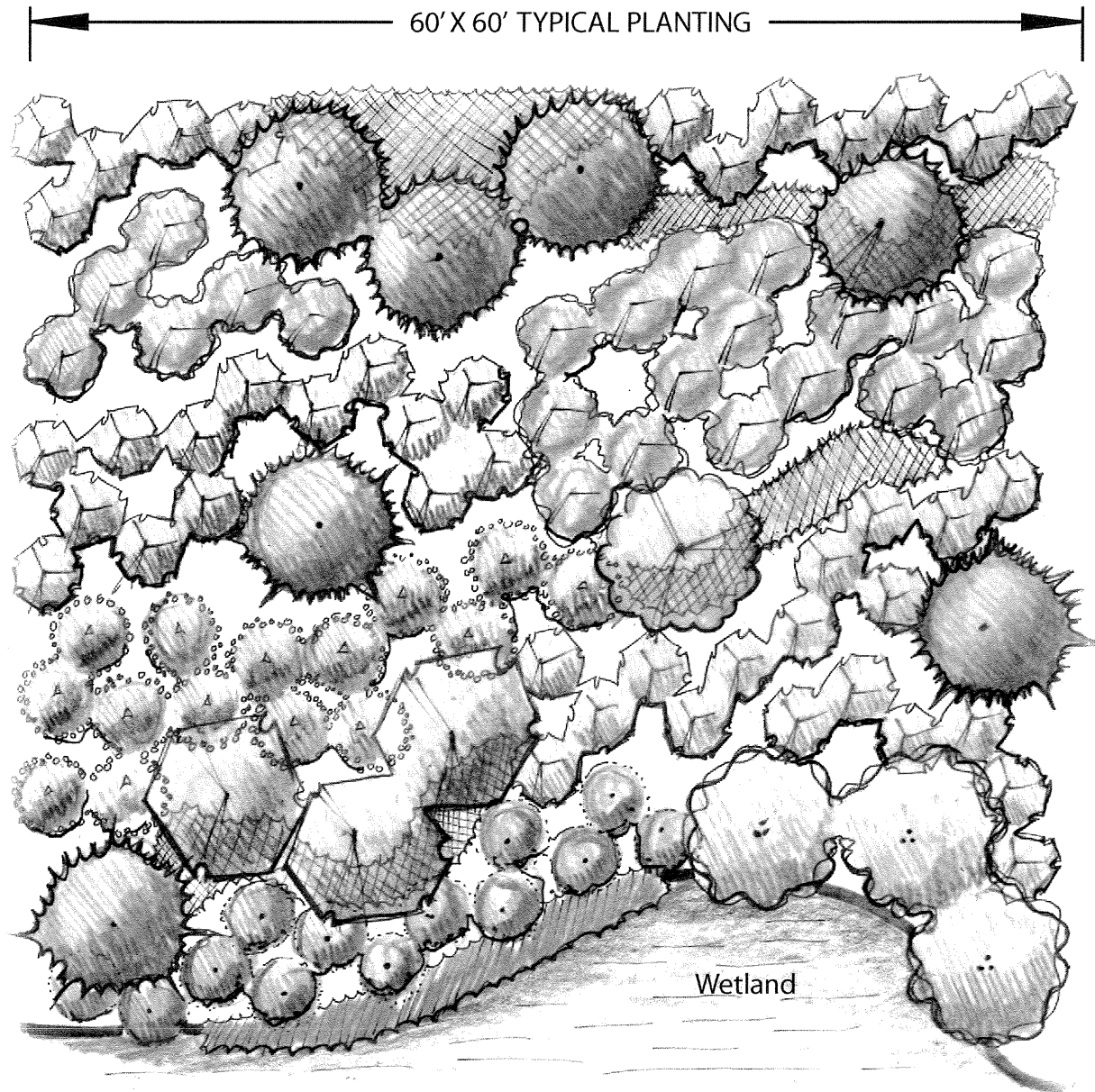
Epilobium angustifolium/
Fireweed

*24 in. on center/
1.5-2 feet

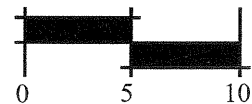
Big purple flowers on a tall
stem

* Indicates plants are to be triangularly spaced for the area shown. See page 23 for triangular spacing.

WETLAND & WETLAND BUFFER NATURALISTIC PLANTING TEMPLATE



SCALE 1"=10'



Similar to shorelines, wetland areas can be subject to fluctuating water levels and provide habitat for wildlife. Refer to the section on *Wetlands* in *Chapter One* and the City's [Critical Areas Ordinance](#) for more information. Planting in wetlands or in areas adjacent to wetland boundaries must be tolerant of inundation and soil saturation. However, the further you get from the wetland boundary, the more drought-adapted the species must be. Plants in this template that are found closer to the wetland boundary are able to handle inundation and wet soil, while plants farther away from the boundary (shown) are suited to drier conditions.

PLANT LEGEND FOR SUNNY SITES

LATIN NAME/ COMMON NAME

TYPICAL SPACING/ AVERAGE HEIGHT

CHARACTERISTICS

TREES

Fraxinus latifolia/
Oregon ash

9 feet on center/
50 feet

Fall color, our only native ash

Picea sitchensis/
Sitka spruce

9 feet on center/
125 feet

Bluish-green foliage year round
wildlife food

Populus trichocarpa/
Black cottonwood

9 feet on center/
150 feet

Fast grower, provides cover for
other plants

Salix lasiandra/
Pacific willow

9 feet on center/
30 feet

Catkins, fast grower, stabilizes
banks, large mature form

Thuja plicata/
Western red cedar

9 feet on center/
125 feet

Fragrant, adaptable to many
sites

SHRUBS

Cornus sericea/
Red-osier dogwood

4 feet on center/
15 feet

Stem provides red color, white
flower in spring berries in
summer

Physocarpus capitatus/
Pacific ninebark

4 feet on center/
11 feet

Orange shredded bark, big
white blossoms

Rosa pisocarpa/
Clustered rose

4.5 feet on center/
5 feet

Wild rose, pink flowers, bright
red rosehips

Spiraea douglasii/
Hardhack

4.5 feet on center/
6 feet

Vigorous grower in wet places,
pink flowers

GROUNDCOVERS & PERENNIALS

Athyrium filix-femina/
Lady fern

*24 in. on center/
3 feet

Often large fern, dies back in
winter, tolerates very wet sites

Lupinus polyphyllus/
Large-leaved lupine

*18 in. on center/
18 in.

Showy lupine, tolerates sun
and dry soils

Mimulus guttatus/
Yellow monkey-flower

*18 in. on center/
18 in.

Trumpet-shaped bright yellow
flowers

Stachys cooleyae/
Cooley's hedge nettle

*24 in. on center/
5 feet

Looks like nettle, but no
stinging, red flowers on an
erect stalk

EMERGENTS

Juncus ensifolius/
Dagger-leaf rush

12 in. on center/
2 feet

Dagger shaped leaves, flat iris-
like

Scirpus acutus/
Hardstem bulrush

12 in. on center/
6 feet

Important food and habitat for
waterfowl and aquatic
mammals

Scirpus microcarpus/
Small-fruited bulrush

12 in. on center/
4.5 feet

Interesting ornamental quality
and bloom

* Indicates plants are to be triangularly spaced for the area shown. See page 23 for triangular spacing.